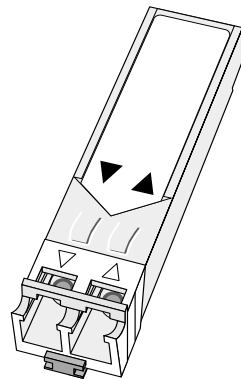


# Mini-Gigabit Interface Connector (Mini-GBIC) Installation Note

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You can add and remove mini-GBICs from your Extreme Networks switch without powering off the system. There are two types of mini-GBIC interfaces: the LX mini-GBIC, which conforms to the 1000BASE-LX standard, and the SX mini-GBIC, which conforms to the 1000BASE-SX standard. The mini-GBIC connector, which is shown in Figure 1, is the same for both types of mini-GBIC interfaces.



XM\_032

**Figure 1:** Mini-GBIC module

Mini-GBICs are a Class 1 laser device. Use only Extreme-approved devices.



*Remove the LC fiber-optic connector from the mini-GBIC prior to removing the mini-GBIC from the port.*



*Mini-GBICs can emit invisible laser radiation. Avoid direct eye exposure to beam.*



*If you see an amber blinking mini-GBIC port status LED on your Extreme Networks switch or you receive an error message when you install a non-Extreme-supported mini-GBIC, you do not have an Extreme-supported mini-GBIC installed in your switch. To correct this problem, make sure you install an Extreme-supported mini-GBIC into the port on the switch.*

To remove the mini-GBIC connector, gently push in the plastic tab at the bottom of the connector and pull the mini-GBIC out of the port on the switch.

To insert a mini-GBIC connector:

- 1 Holding the mini-GBIC by its sides, insert the mini-GBIC into the port on the switch.
- 2 Slide the mini-GBIC into the port, until you hear it click.

## LX Mini-GBIC Specifications

Table 1 describes the specifications for the LX mini-GBIC interface.

**Table 1:** LX Mini-GBIC Specifications

Parameter	Minimum	Typical	Maximum
<b>Transceiver</b>			
Optical output power	-9.5 dBm		-3 dBm
Center wavelength	1275 nm	1310 nm	1355 nm
<b>Receiver</b>			
Optical input power sensitivity	-23 dBm		
Optical input power maximum			-3 dBm
Operating wavelength	1270 nm		1355 nm
<b>General</b>			
Total system budget			13.5 dBm

Total optical system budget for the LX mini-GBIC is 13.5 dBm. Measure cable plant losses with a 1310 nm light source and verify this to be within budget. When calculating the maximum distance attainable using optical cable with a specified loss per kilometer (for example 0.25 dB/km) Extreme Networks recommends that 3 dBm of the total budget be reserved for losses induced by cable splices/connectors and operating margin. Thus, 10.5 dBm remains available for cable induced attenuation. There is no minimum attenuation or minimum cable length restriction.

## SX Mini-GBIC Specifications

Table 2 describes the specifications for the SX mini-GBIC interface.

**Table 2:** SX Mini-GBIC Specifications

Parameter	Minimum	Typical	Maximum
<b>Transceiver</b>			
Optical output power	-9.5 dBm		-4 dBm
Center wavelength	830 nm	850 nm	860 nm
<b>Receiver</b>			
Optical input power sensitivity	-21 dBm		
Optical input power maximum			-4 dBm
Operating wavelength	830 nm		860 nm
<b>General</b>			
Total system budget			11.5 dBm

Total optical system budget for the SX mini-GBIC is 11.5 dBm. Extreme Networks recommends that 3 dBm of the total budget be reserved for losses induced by cable splices/connectors and operating margin. While 8.5 dBm remains available for cable induced attenuation, the 1000Base-SX standard specifies supported distances of 275 meters over 62.5 micron multimode fiber and 550 meters over 50 micron multimode fiber. There is no minimum attenuation or minimum cable length restriction.